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Consultants in Acute and Chronic Pain Management

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Disc Replacement Therapy

Recently artificial disc therapy has become available for patients suffering from intractable low back pain (Fig. 1). The therapy involves surgically excising existing disc material and replacing it with a mobile prosthesis. The procedure is now available as an alternative to disc fusion and has the theoretical advantages of preserving motion and thus reducing the likely-hood of adjacent segment disease. Reducing adjacent segment disease may improve clinical outcomes and reduce the need for reoperation over time.

Although most acute low back pain is muscular and self-limited, the origin of chronic low back pain is multifactorial (Table 1). Patients failing to respond to conservative therapy are sometimes considered candidates for lumbar spine surgery. It is estimated that greater than 50 percent of lumbar fusion surgeries are performed for low back pain related to degenerative disc disease. Disc degeneration is a complicated process involving alterations in the normal proteoglycan and collagen substrates. Possible etiologies of disc degeneration include repetitive heavy lifting, smoking, infection, trauma, and genetic factors the latter of which seem to be the most important.

Table 1. Common causes of chronic low back pain.

- Degenerative disc disease
- Spinal stenosis
- Spondylosis
- Spondylolisthesis
- Displaced (herniated) discs
- Sacroiliitis
- Compression fractures

Common indications for total disc arthroplasty include:

- Symptomatic degenerative disc disease as confirmed by provocative discography
- Contained herniated nucleus pulposus
- Relative lack of nerve root compression
- Lack of unstable spondylolisthesis
- Failure to respond to 6 months or more of conservative therapy including physiotherapy, injection therapy and medication management.



Fig. 1. Charité III disc replacement device.

For Information and Referrals:

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